Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	MB Docket 87-268
And Their Impact Upon the	)	
Existing Television Broadcast Service	)	

To: The Commission

COMMENTS OF PUERTO RICO PUBLIC BROADCASTING CORPORATION

Puerto Rico Public Broadcasting Corporation ("PRPBC"), the permittee of DTV television stations WIPR-DT, San Juan, Puerto Rico and WIPM-DT, Mayaguez, Puerto Rico, by its attorneys, hereby submits these comments in response to the Commission's Seventh Further Notice of Proposed Rulemaking in the above-referenced proceeding ("Seventh FNPR"). In the Seventh FNPR, the Commission proposes a DTV Table of Allotments ("DTV Table") which sets forth technical operating parameters for each eligible station's DTV operations at the end of the DTV transition. In developing the DTV Table, the Commission relied upon certifications made by DTV licensees and permittees during the channel election process with regard to their proposed final DTV operations, as well as objective computer analysis pursuant to the technical standards and methods set forth in the Commission's rules.[1] PRPBC submits these comments with respect to the technical parameters set forth in the DTV Table for WIPR-DT and WIPM-DT.

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[1] The Commission used the procedures set forth in the Office of Engineering and Technology's *OET Bulletin No. 69*, which uses Longley-Rice methodology, to make predictions of service coverage and interference.

WIPR-DT

The Commission allotted PRPBC channel 55 for WIPR-TV's transitional DTV channel, with an effective radiated power ("ERP") of 977.2 kilowatts at 825 meters height above average terrain ("HAAT"). PRPBC, in its Form 381 Pre-Election Certification submitted on November 4, 2004 (see file BCERT-20041104AJU), certified that it would replicate the channel 55 facilities when it constructed permanent DTV facilities. Thereafter, PRPBC elected to have the Commission find the "best-available" post transition DTV channel allotment for WIPR-DT (see file BSREET-20051028AAK). The Commission tentatively designated channel 43 for WIPR-DT's permanent operations.

The DTV Table specifies the following for WIPR-DT's permanent DTV facilities:

Channel: 43 ERP: 791 kW HAAT: 825 m Antenna ID: 74633

PRPBC's consulting engineers have reviewed these proposed parameters and have determined that there is no practical antenna that can be constructed that will match the azimuth pattern envelope created by the facilities specified above.[2] Accordingly, PRPBC proposes to use an omnidirectional antenna for WIPR-DT. In addition, PRPBC does not own the antenna structure from which WIPR-DT will operate. PRPBC has negotiated with the tower owner and obtained permission to place WIPR-DT's antenna at the top of the tower, which will provide WIPR-DT's antenna with a HAAT of 866 meters. In order to most fully match the DTV Table facilities, PRPBC proposes to substitute the following operating parameters for those proposed above:

Channel: 43 ERP: 525 kW HAAT: 866 m Antenna ID: Omnidirectional

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[2] See the attached Technical Statement of du Treil, Lundin & Rackley, Inc. at p. 2.

The Seventh FNPR states that the facilities proposed in the DTV Table will cover an area of 48,283 square kilometers and serve a population of 3,343,000. The attached Technical Statement demonstrates that WIPR-DT's proposed facilities on channel 43 will cover 46,773 square kilometers, which includes nearly the entire land area of the facilities proposed in the DTV Table for WIPR-DT. PRPBC's proposed facilities will serve a population of 3,290,000, which is 98.4 percent of the population to be served by the facilities for WIPR-DT specified in the DTV Table. Accordingly, PRPBC requests that the Commission revise the DTV Table to include PRPBC's proposed post-transition DTV operating parameters as:

Channel: 43 ERP: 525 kW HAAT: 866 m Antenna ID: Omnidirectional

PRPBC further requests that the Commission confirm that the above-specified operating parameters are sufficient to meet PRPBC's certification of construction of replication facilities as set forth in its Form 381.

WIPM-DT

The Commission allotted PRPBC channel 35 for WIPM-TV's transitional DTV channel with an ERP of 1000 kilowatts at 691 meters HAAT, with an antenna pattern proposed to match WIPM-TV's analog antenna pattern. PRPBC, in its Form 381 Pre-Election Certification submitted on November 4, 2004 (see file BCERT-20041104AJT), certified that it would replicate these facilities for WIPM-DT's permanent DTV facilities. PRPBC subsequently submitted an election to continue operating WIPM-DT on channel 35 at the end of the DTV transition (see file BFREET-20050210ACE), which the Commission tentatively approved.

The DTV Table specifies the following for WIPM-DT's permanent DTV facilities:

Channel: 35 ERP: 1000 kW HAAT: 691 m Antenna ID: 74633

In April 1998, PRPBC's consulting engineers determined that it would not be practical or feasible to match WIPM-DT's antenna pattern to WIPM-TV's antenna pattern and, therefore, PRPBC submitted an application for DTV construction permit with a non-directional antenna (see file BPEDT-20000426ABD). PRPBC subsequently submitted an application for construction permit to relocate WIPM-DT from its current tower to a new (stronger) tower nearby; in that application PRPBC specified an ERP of 674 kilowatts and a HAAT of 620 meters (see file BMPECDT-20030204ADS). The Commission granted that application and PRPBC has constructed the facilities specified therein. (An application for license remains pending – see BLEDT-20060627ACQ.) Accordingly, PRPBC requests that the Commission substitute the following parameters for those currently proposed in the DTV Table:

Channel: 35 ERP: 674 kW HAAT: 620 m Antenna ID: Non-directional

The Seventh FNPR states that the facilities proposed in the DTV Table will cover an area of 45,118 square kilometers and serve a population of 1,962,000. The attached Technical Statement demonstrates that PRPBC's above-proposed DTV facilities on channel 35 will cover 43,775 square kilometers and serve a population of 1,951,000. Although the area of coverage provided by WIPR-DT's constructed DTV facilities is approximately three percent less than that specified in the Seventh FNPR, the difference is primarily over water. WIPM-DT's as-constructed facilities serve 99.4 percent of the population specified in the DTV Table. Accordingly, PRPBC requests that the Commission revise the DTV Table to specify WIPM-DT's facilities as specified in its license application:

Channel: 35 ERP: 674 kW HAAT: 620 m Antenna ID: Non-directional

PRPBC further requests that the Commission confirm that the above-specified operating parameters are sufficient to meet PRPBC's certification of construction of replication facilities as set forth in its Form 381.

Respectfully submitted,

PUERTO RICO PUBLIC BROADCASTING CORPORATION

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January 25, 2007

TECHNICAL STATEMENT
CONCERNING POST-TRANSITION DTV ALLOTMENT FACILITIES
FOR TELEVISION STATIONS WIPR-DT, SAN JUAN, PUERTO RICO
AND WIPM-DT, MAYAGÜEZ, PUERTO RICO

This Technical Statement was prepared on behalf of Puerto Rico Public Broadcasting Corporation ("PRPBC"), licensee of television stations WIPR-TV/DT, San Juan, Puerto Rico and WIPM-TV/DT, Mayagüez, Puerto Rico, in support of comments in the FCC's *Seventh Further Notice of Proposed Rule Making*, "In the Matter of Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service," MB Docket No. 87-268, Released: October 20, 2006 (herein "*Seventh NPRM*").

This statement provides information about the post-transition digital facilities to be allotted to WIPR-DT and WIPM-DT and the facilities that will be, or have been, constructed for post-transition operation.

WIPR-DT, San Juan, Puerto Rico

WIPR-TV is licensed for analog operation on Channel 6 with a non-directional peak visual effective radiated power (ERP) of 58.9 kW and an antenna height above average terrain (HAAT) of 825 m. In 1998, WIPR-DT was originally allotted out-of-core Channel 55 as its transitional digital television channel. This facility was allotted with a maximum average ERP of 977.2 kW and an antenna HAAT of 825 m.*

In its pre-election certification (Form 381), PRPBC certified that it would operate its post-transition DTV station based on "replication facilities."† For the purposes of the channel elections process the FCC interpreted this to mean that the coverage footprint of the originally allotted Channel 55 facility would be translated to

* *See* Appendix B, "DTV Table of Allotments," *Second Memorandum Opinion and Order on Reconsideration of The Fifth and Sixth Report and Orders*, MM Docket No. 87-268, 14 FCC Rcd 1348 (1998).
† See FCC File No. BCERET-20041104AJU.

whatever channel it ultimately would end up with in the process. The channel that WIPR-DT would be allotted for the post-transition was unknown at the time. Since WIPR-DT elected the "best-available" channel option, the FCC tentatively designated Channel 43 for its use in the *Seventh NPRM.*

The Channel 43 post-transition facility that is proposed for WIPR-DT is based on the original Channel 55 footprint. Given the dipole-factor employed in the UHF band, the change in channel resulted in an allotment with a maximum ERP of 791.19 kW. The FCC carried over its odd-shaped directional antenna pattern to retain the shape of the original coverage footprint. The attached Figure 1 is a polar graph showing the FCC allotment pattern for WIPR-DT on Channel 43.

However, no practical antenna can be developed to precisely match the azimuth pattern envelope for the allotment. Therefore, WIPR-DT plans to construct a non-directional facility for its post-transition digital facility. WIPR-DT's new antenna stack will replace the existing analog Channel 4 antenna (licensed to Televicentro of Puerto Rico, LLC) at the top of its tower; thus, the new digital transmitting antenna for WIPR-DT is expected to be approximately 41 m higher than the present analog Channel 6 antenna. The proposed post-transition facility for WIPR-DT will have a HAAT of 866 m. In order for WIPR-DT to maintain its predicted coverage within the allotted post-transition digital facility, PRPBC will need to reduce its omni-directional average ERP to a nominal 525 kW.

This facility will nearly fill the FCC allotment footprint, but not completely, because it is impossible to do so with the pattern given by the FCC. The map in Figure 2 illustrates the predicted noise-limited contours for the WIPR-DT Seventh NPRM allotment facility and for the facility to be built by WIPR-DT for its post-transition operations. The facility to be constructed by WIPR-DT will cover nearly the entire land area of the WIPR-DT allotment facility.

The Channel 43 facility set forth in the Seventh NPRM will provide service to a 2000 Census population of 3,343,000 within an area of 48,283 square kilometers. Based on an FCC Office of Engineering and Technology Bulletin No. 69

(OET-69) analysis, the predicted post-transition coverage of the WIPR-DT Channel 43 facility to be constructed will provide service to a 2000 Census population of 3,290,000 within an area of 46,773 square kilometers, with 0.0% predicted interference to be received. Thus, the WIPR-DT facility to be constructed will serve 98.4% of the population within the WIPR-DT facility allotted in the Seventh NPRM.

PRPBC requests that the FCC confirm that the post-transition facility to be built by WIPR-DT will, in fact, meet the terms of its certification to build "replication facilities"; or in the alternative, PRPBC requests that the FCC modify the WIPR-DT post-transition facility to match the facilities expected to be built for WIPR-DT on Channel 43 post-transition.

WIPM-DT, Mayagüez, Puerto Rico

The situation for WIPM-DT is not entirely dissimilar from that of WIPR-DT. However, WIPM-DT has an in-core DTV facility, which it has already constructed, with an application for license pending. WIPM-TV is licensed for analog operation on Channel 3 with a non-directional peak visual ERP of 81.3 kW and an antenna HAAT of 691 m. WIPM-DT was allotted digital Channel 35 as its transitional digital television channel. This facility was allotted with a maximum average ERP of 1000 kW and an antenna HAAT of 691 m.

In its pre-election certification (Form 381), PRPBC certified that it would operate its post-transition DTV station based on "replication facilities."[‡] For the purposes of the channel election process, the FCC interpreted this to mean that the coverage footprint of the originally allotted Channel 35 facility would be employed as its post-transition channel coverage footprint. The FCC continued to employ its odd-shaped directional antenna pattern to retain the shape of the original analog coverage footprint. The attached Figure 3 is a polar graph showing the FCC allotment pattern for WIPM-DT on Channel 35.

[‡] See FCC File No. BCERET-20041104AJT.

Because no practical antenna could be constructed to precisely match the azimuth pattern envelope for the WIPM-DT allotment, WIPM-DT constructed a non-directional facility. The existing facility for WIPM-DT has an HAAT of 674 m with a non-directional ERP of 620 kW.[§]

This facility nearly fills the FCC allotment footprint, but not completely, because it is impossible to do so with the pattern given by the FCC. The map in Figure 4 illustrates the predicted noise-limited contours for the facility allotted to WIPM-DT by the Seventh NPRM and for the constructed WIPM-DT. The constructed WIPM-DT facility covers nearly the entire land area of the WIPM-DT allotment facility.

The Channel 35 facility for WIPM-DT set forth in the Seventh NPRM will provide service to a 2000 Census population of 1,962,000 within an area of 45,118 square kilometers. Based on OET-69 analysis, the predicted post-transition coverage of the WIPM-DT Channel 35 facility to be constructed will provide service to a 2000 Census population of 1,951,000 within an area of 43,775 square kilometers, with 0.1% predicted interference to be received. Thus the WIPM-DT facility serves 99.4% of the population within the WIPM-DT facility allotted in the Seventh NPRM.

PRPBC requests that the FCC confirm that the as-built post-transition facility for WIPM-DT will, in fact, meet the terms of its certification to build "replication

[§] See FCC File Nos. BMPEDT-20030204ADS and BLEDT-20060627ACQ.

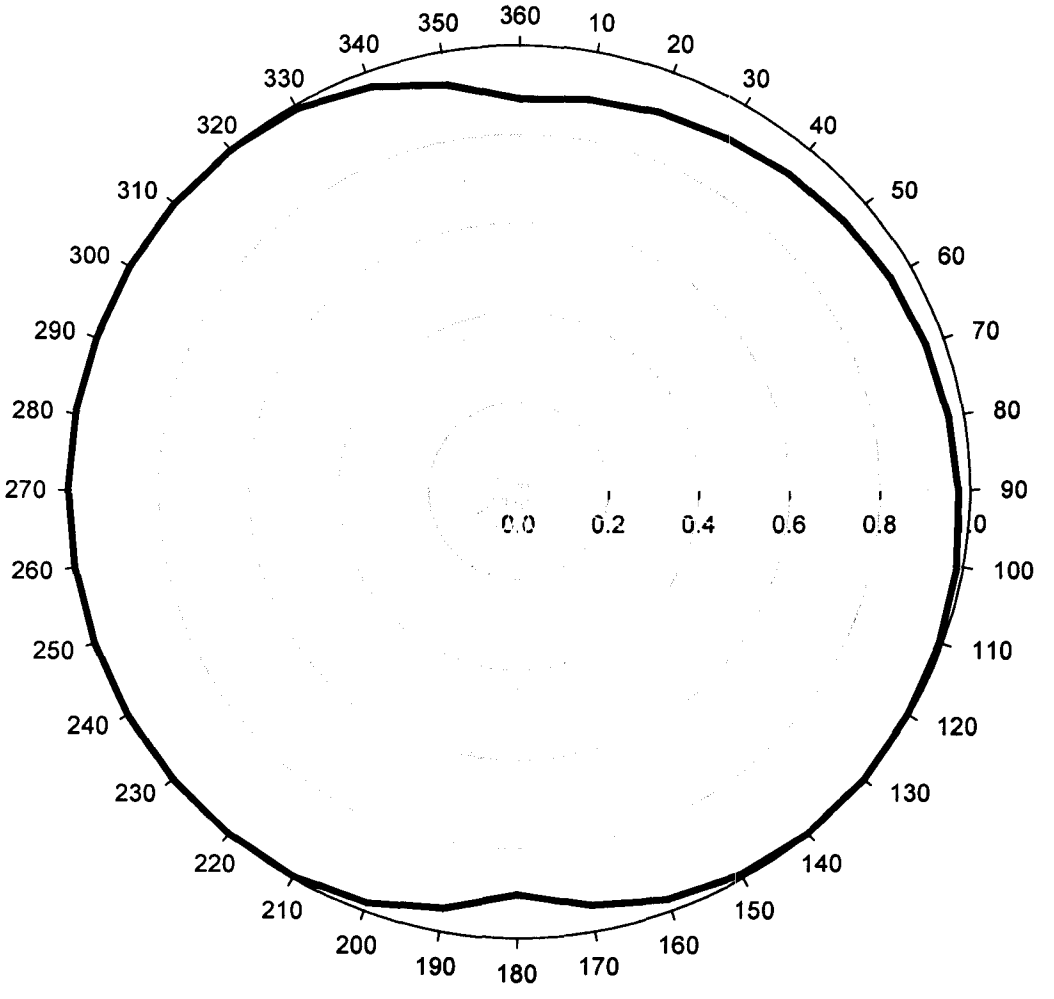
facilities"; or, in the alternative, PRPBC requests that the FCC modify the WIPM-DT post-transition facility to match the facilities constructed for WIPM-DT on Channel 35 which will be employed post-transition.

Louis Robert du Treil, Jr., P.E.

du Treil, Lundin & Rackley, Inc.
201 Fletcher Ave.
Sarasota, Florida 34237

December 21, 2006

Figure 1



Tabulation of Relative Field Pattern							
0	0.881	90	0.974	180	0.903	270	1.000
10	0.893	100	0.986	190	0.948	280	1.000
20	0.905	110	0.993	200	0.981	290	0.999
30	0.916	120	0.996	210	0.996	300	0.999
40	0.928	130	0.999	220	0.999	310	0.999
50	0.939	140	0.998	230	1.000	320	0.998
60	0.949	150	0.991	240	1.000	330	0.991
70	0.959	160	0.973	250	1.000	340	0.966
80	0.966	170	0.941	260	1.000	350	0.926

FCC PATTERN FOR WIPR-DT CHANNEL 43 ALLOTMENT

WIPR-DT ALLOTMENT FACILITY
SAN JUAN, PUERTO RICO
CHANNEL 43, 791.16 KW (MAX-DA), 825 M HAAT

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

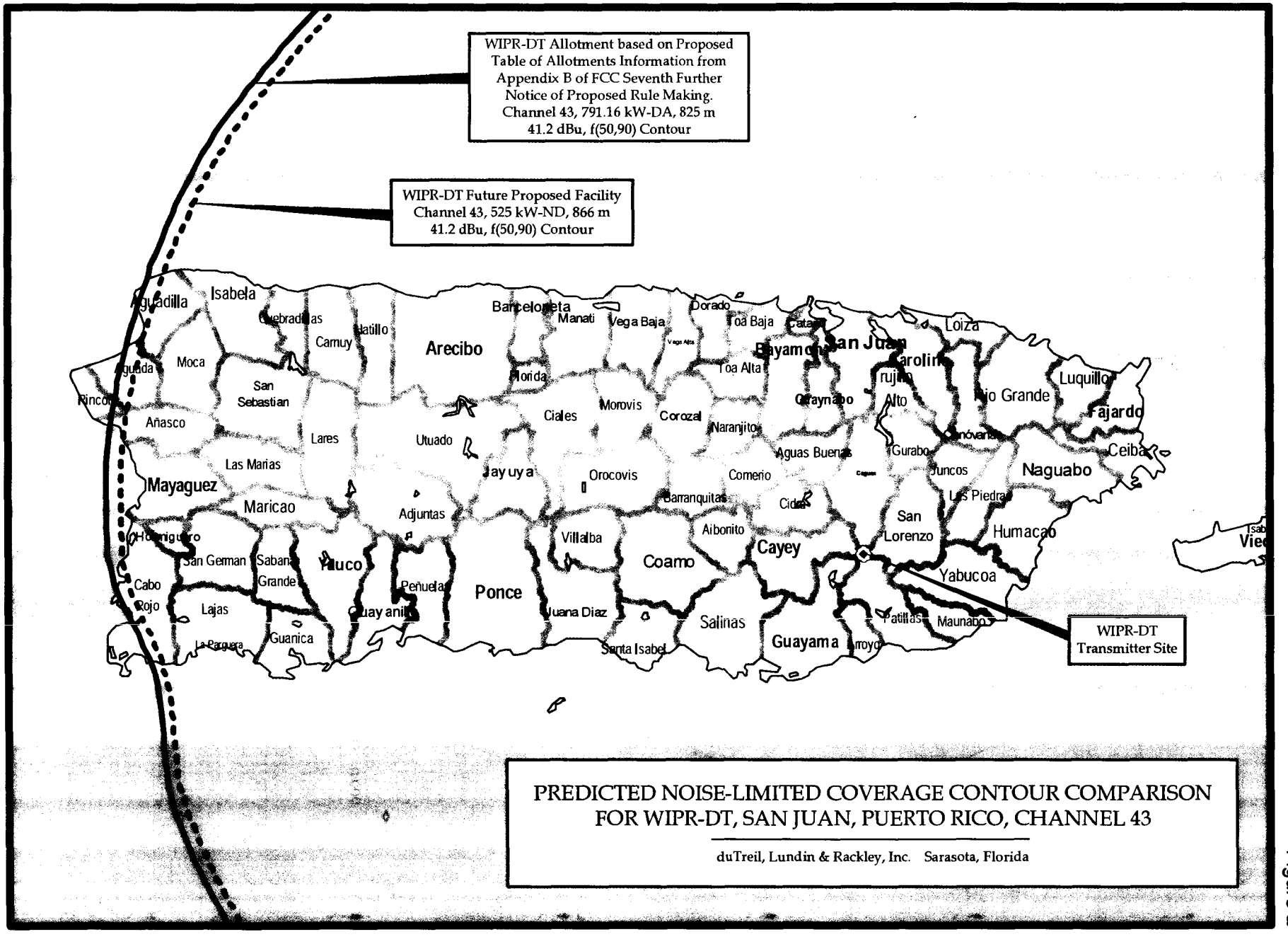
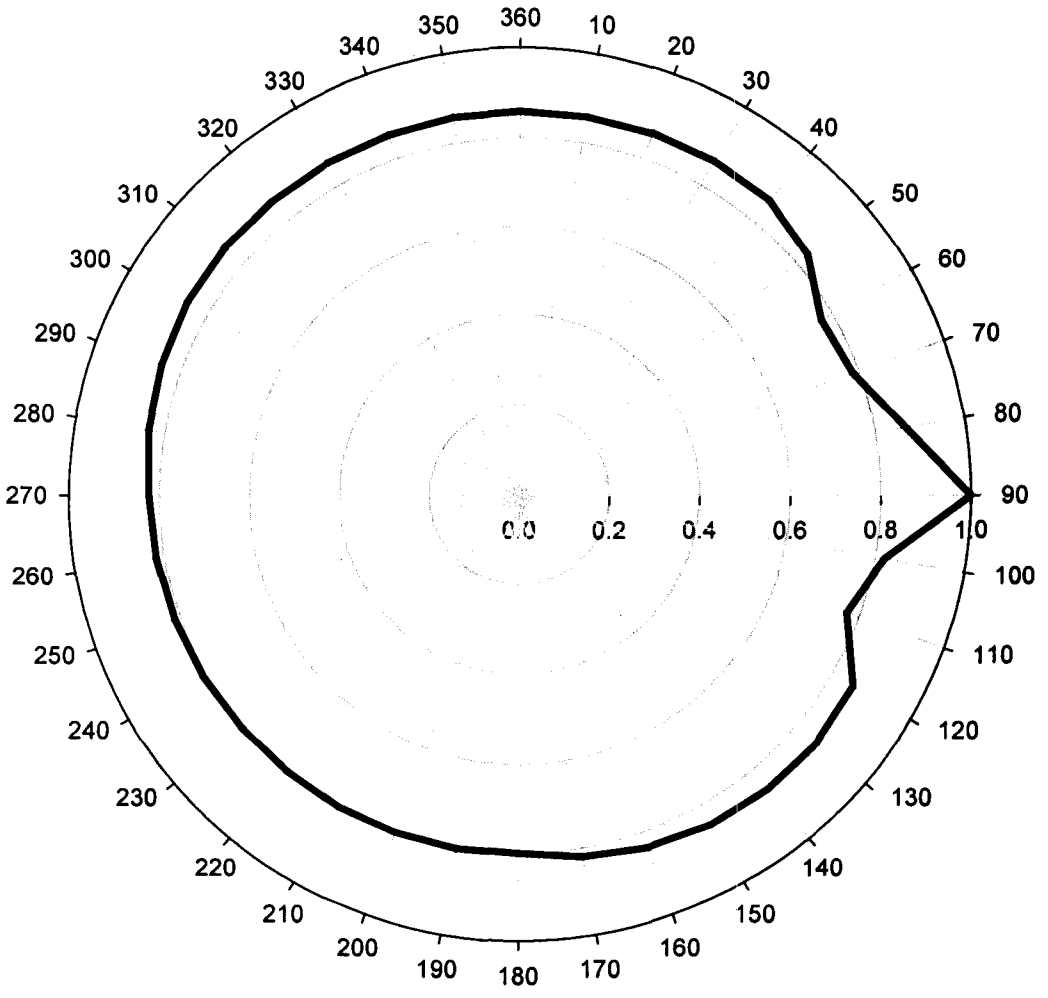

WIPR-DT Allotment based on Proposed Table of Allotments Information from Appendix B of FCC Seventh Further Notice of Proposed Rule Making. Channel 43, 791.16 kW-DA, 825 m 41.2 dBu, f(50,90) Contour
WIPR-DT Future Proposed Facility Channel 43, 525 kW-ND, 866 m 41.2 dBu, f(50,90) Contour
Aguadilla
Isabela
Quebradillas
Camuy
Hatillo
Arecibo
Barceloneta
Manati
Vega Baja
Dorado
Toa Baja
Catano
San Juan
Loiza
Bayamon
Carolina
Toa Alta
Florida
Luquillo
Fajardo
Ceiba
Naguabo
Rio Grande
Aguada
Moca
San Sebastian
Rincon
Anasco
Lares
Utuado
Ciales
Morovis
Corozal
Naranjito
Aguas Buenas
Gurabo
Juncos
Las Piedras
Humacao
Canovanas
Las Marias
Mayaguez
Maricao
Adjuntas
Jayuya
Orocovis
Comerio
Barranquitas
Cidra
Aibonito
San Lorenzo
Cayey
Villalba
Coamo
Yabucoa
Hormigueros
San German
Sabana Grande
Yauco
Penuelas
Ponce
Juana Diaz
Salinas
Guayama
Patillas
Maunabo
Arroyo
Cabo Rojo
Lajas
Guayanilla
Guanica
La Parguera
Santa Isabel
WIPR-DT Transmitter Site
PREDICTED NOISE-LIMITED COVERAGE CONTOUR COMPARISON FOR WIPR-DT, SAN JUAN, PUERTO RICO, CHANNEL 43
duTreil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2

Figure 3



Tabulation of Relative Field Pattern							
0	0.858	90	1.000	180	0.800	270	0.823
10	0.859	100	0.821	190	0.801	280	0.837
20	0.861	110	0.771	200	0.801	290	0.846
30	0.862	120	0.854	210	0.802	300	0.853
40	0.860	130	0.858	220	0.802	310	0.856
50	0.832	140	0.855	230	0.804	320	0.857
60	0.772	150	0.849	240	0.810	330	0.857
70	0.786	160	0.837	250	0.814	340	0.857
80	0.867	170	0.820	260	0.818	350	0.858

FCC PATTERN FOR WIPM-DT CHANNEL 35 ALLOTMENT

WIPM-DT ALLOTMENT FACILITY
MAYAGUEZ, PUERTO RICO
CHANNEL 35, 1000 KW (MAX-DA), 691 M HAAT

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

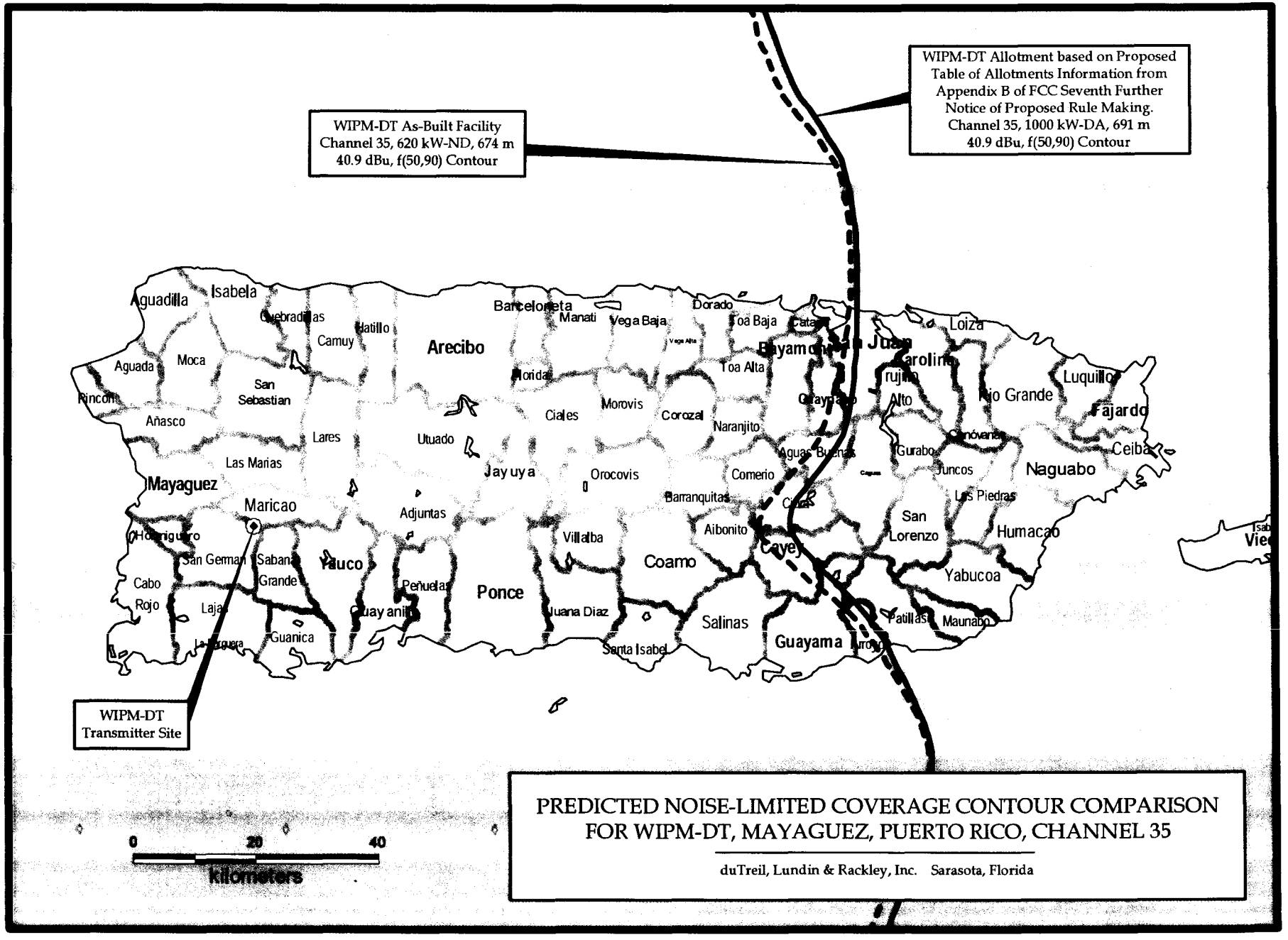

WIPM-DT Allotment based on Proposed Table of Allotments Information from Appendix B of FCC Seventh Further Notice of Proposed Rule Making. Channel 35, 1000 kW-DA, 691 m 40.9 dBu, f(50,90) Contour
WIPM-DT As-Built Facility Channel 35, 620 kW-ND, 674 m 40.9 dBu, f(50,90) Contour
WIPM-DT Transmitter Site
Aguadilla
Isabela
Quebradillas
Camuy
Hatillo
Arecibo
Barceloneta
Manati
Vega Baja
Dorado
Toa Baja
Loiza
Aguada
Moca
San Sebastian
Florida
Toa Alta
Rincon
Añasco
Ciales
Morovis
Corozal
Naranjito
Luquillo
Fajardo
Rio Grande
Lares
Utuado
Las Marias
Jayuya
Orocovis
Comerio
Gurabo
Juncos
Naguabo
Ceiba
Mayaguez
Maricao
Adjuntas
Barranquitas
Las Piedras
Hormigueros
San German
Sabana Grande
Yauco
Villalba
Aibonito
San Lorenzo
Humacao
Coamo
Cabo Rojo
Lajas
Peñuelas
Ponce
Juana Diaz
Salinas
Yabucoa
Guayanilla
Guanica
Santa Isabel
Guayama
Patillas
Maunabo
0
20
40
Kilometers
PREDICTED NOISE-LIMITED COVERAGE CONTOUR COMPARISON FOR WIPM-DT, MAYAGUEZ, PUERTO RICO, CHANNEL 35
duTreil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 4